Other embodiments not described herein are also within the scope of the following claims.

What is claimed is:

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1. A waveguide comprising:

a waveguide core having a top surface that defines an angle.

2. The waveguide of claim 1, wherein the angle is at least equal to an angle of total internal reflection of the waveguide core.

3. The waveguide of claim 1, wherein the waveguide core defines a beveled mirror.

4. The waveguide of claim 1, further comprising:

a phototransistor having a base,

wherein the waveguide core is coupled to the base of the phototransistor.

5. The waveguide of claim 4, wherein the waveguide core defines a beveled mirror.

6. The waveguide of claim 5, wherein the waveguide core is disposed over a substrate and the beveled mirror directs a mode propagated through the waveguide core into the substrate.

7. The waveguide of claim 1, further comprising:

a photodiode having an n-type region, an intrinsic layer region, and a p-type region,

wherein the waveguide core is coupled to the intrinsic layer region of the photodiode.

8. The waveguide of claim 7, wherein the waveguide core defines a beveled mirror.

9. The waveguide of claim 8, wherein the waveguide core is disposed over a substrate and the beveled mirror directs a mode propagated through the waveguide core into the substrate.

10. A waveguide comprising:

a waveguide core disposed over a substrate; and

a cladding layer disposed between the waveguide core and the substrate,

wherein the waveguide core is offset from the substrate by the cladding layer.

11. The waveguide of claim 10, wherein the waveguide core has an index of refraction that is higher than an index of refraction of the cladding layer.

12. The waveguide of claim 10, further comprising:

a detector material disposed over the substrate,

wherein at least a portion of the detector material is removed proximate the waveguide core.

13. A phototransistor comprising:

an emitter formed in a substrate;

a collector formed in the substrate; and

a base formed in the substrate between the emitter and the collector,

wherein the emitter, the collector, and the base are in lateral alignment in the substrate.

14. The phototransistor of claim 13, wherein the base comprises a lossy material.

15. The phototransistor of claim 13, further comprising:

a waveguide core.

16. The phototransistor of claim 15, wherein the waveguide core is configured to propagate a mode into the base.

17. A photodiode comprising:

an n-type region formed in a substrate;

a p-type region formed in the substrate; and

an intrinsic portion of the substrate disposed between the n-type region and the p-type region,

wherein the n-type region, the p-type region, and the intrinsic portion of the substrate are in lateral alignment.

18. The photodiode of claim 17, wherein the intrinsic portion of the substrate comprises a lossy material.

19. The photodiode of claim 17, further comprising:

a waveguide core.

20. The photodiode of claim 19, wherein the waveguide core is configured to propagate a mode into the intrinsic portion of the substrate disposed between the n-type region and the p-type region.

21. A waveguide comprising:

a waveguide core disposed over a substrate;

an attenuating layer disposed over the substrate and below the waveguide core; and

a detector layer disposed between the attenuating layer and the substrate.

22. The waveguide of claim 21, wherein the attenuating layer comprises germanium.

23. The waveguide of claim 21, wherein the detector layer comprises silicon.

24. A method for fabricating a device comprising:

forming a cladding layer over a substrate having a detector layer disposed over a portion of the substrate;

forming an opening in the cladding layer to expose a portion of the detector layer;

forming a waveguide layer over the cladding layer and the opening;

removing a portion of the waveguide layer to define a waveguide core; and

implanting a first region and a second region into the exposed portion of the detector layer proximate the waveguide core.

25. The method of claim 24, wherein implanting a first region and a second region comprises implanting an emitter and a collector.

26. The method of claim 24, wherein implanting a first region and second region comprises implanting an n-type region and a p-type region.

27. The method of claim 24, wherein forming the waveguide layer includes offsetting the waveguide layer from the detector layer by the cladding layer.

28. The method of claim 24, wherein forming a waveguide layer over the cladding material includes forming a beveled mirror.

29. The method of claim 25, wherein forming the waveguide layer includes offsetting the waveguide layer from the detector layer by the cladding layer.

30. The method of claim 25, wherein forming a waveguide layer over the cladding material includes forming a beveled mirror.